D381/D383 3IR +UV Multi-Spectrum Flame Detectors

SaeVu
BY SPACE AGE ELECTRONICS

PRODUCT DESCRIPTION

The D381 and D383 Multi-Spectrum Flame Detectors are the most advanced optical flame detectors designed to respond to both hydrocarbon and non-hydrocarbon fires while rejecting false alarm sources. The D38X detectors sense UV radiation in the ultraviolet spectrum and infrared radiation in 3 discrete bands of the IR spectrum for detecting fires. Flame response and false source rejection for the D38X models is accomplished by utilizing the Convolution Method and Advanced DSP (Digital Signal Processing) in conjunction with hard coded algorithms identifying specific wavelengths of energy. The detectors are able to respond to hydrocarbon and non-hydrocarbon fires at a distance of 80+ feet, all while rejecting false sources.

The D381 detector is designed for a multitude of applications. The detector will respond to a 1 ft. x 1 ft. n-Heptane or IPA fires from 200 feet within approximately 3-5 seconds. The model D383 is a high-speed flame detector designed specifically for liquid spray paint and powder coating applications or anywhere a fast detection time is required. The model D383 offers fast and reliable fire detection and monitoring for detecting flash fires within 0.3 in compliance with NFPA 33 Standard. The models D38X series are stand-alone fire & flame detectors in watertight NEMA 4 (IP66/67) aluminum enclosures. The detectors feature automatic self-test for continuously checking the optical path integrity while monitoring the electronics to ensure utmost reliable operation and fault reporting.

The detectors are supplied with Alarm / Auxiliary / Fault relays, 0-20 mA analog and RS485 outputs. They can store 200 events and 6 FireGraphs in their FRMA memory.

APPLICATIONS

- ❖ Airports & Aircraft Hangars
- ❖ Warehouse & Storage Facilities
- ❖ Manufacturing & Food Processing
- ❖ Diesel Generators & Fuel Storage
- ❖ Battery Rooms & Charging Facilities
- ❖ Compressor Stations
- ❖ Paint Booths
- ❖ Paint & Solvent Storage Facilities
- ❖ Recycling Centers
- ❖ Power Plants

FEATURES AND BENEFITS

- ❖ Multi-Spectrum 3IR + UV design
- ❖ Detects Hydrocarbon and Non-Hydrocarbon fires with the highest false alarm immunity
- ❖ Standard outputs: Warning / Alarm / Fault / Auxiliary relays, 0-20mA and RS485
- ❖ 200 event history log & 6 FireGraphs®
- ❖ Adjustable Time/Verification Delay up to 20 seconds
- ❖ Automatic Self-Test checking electronic circuitry and Optical Path Integrity test with OptiRadar®
- ❖ Copper free aluminum enclosure, powder coated finish
- ❖ Test Mode for manual testing
- ❖ Integral cable harness for easy field wiring
- ❖ Solar Blind
- ❖ Heater Option to avoid condensation and icing
- ❖ High False Alarm immunity to external non-fire sources
- ❖ Manufactured in the USA with a 5-year warranty
- ❖ RFI & EMC compliant
- ❖ Meets SIL 2 requirements
- ❖ FM/CFM/CSFM Approved
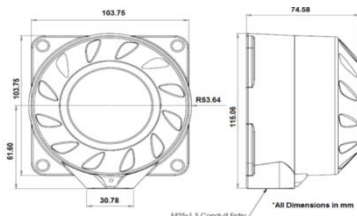- ❖ NEMA 4 (IP66/67) Enclosure

GENERAL

`Field-of-View:	90° Horizontal and Vertical
Spectral Sensitivity	UV: 180-260 nanometers
	IR: 2-5 microns (3 discrete bands)

Detection Range: D-381	FM 12"x12" n-Heptane fire – 80 ft (24.4m) 12"x12" IPA fire – 80 ft (24.4 m) (FM) 36" plume Hydrogen fire – 60 ft (18 m) (FM) 12"x12" n-Heptane fire – 200 ft (61 m) (DI)
Detection Range: D383	12"x12" n-Heptane fire – 40 ft (24.4 m) (FM) Flash fires – 0.3 seconds @ 30 ft (9.1 m) (FM) 12"x12" n-Heptane fire – 200 ft (61 m) (DI)

Std Response time	D381	Typically 3-5 seconds
Std Response time	D383	Typically 0.3 seconds

ELECTRICAL

Power Consumption:	Standby: 60 mA @ 24 VDC Alarm: 90 mA @ 24 VDC
Heater Option:	120 mA additional
Output Relays:	Alarm / Auxiliary / Fault SPDT—contacts rated 2A @ 24 VDC Alarm & Auxiliary relays: De-Energized Fault relay: Energized
Adjustable Time/ Verification Delay	Aux relay setting .3, 3, 10, 20 seconds
Analog Output:	0-20 mA Stepped - Source
Communication:	RS485 ModBus
Visual Indications:	Green LED - Normal Red LED - Alarm Amber LED - Fault
Conduit Entries:	Standard: (2) M25
Wiring:	12 AWG (3.3 mm²) - 22 AWG (.33mm²)

MECHANICAL
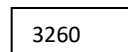
Enclosure Material:	360 Copper-Free Aluminum, Powder Coated
Weight:	2.5 lbs. (1.1 kg)
Mounting:	Stainless steel swivel arm – order separately DA-002 6.6 lbs. (3 kg)

ENVIRONMENTAL

Humidity Range:	5 to 95% Relative humidity, Non-Cond.
Temperature Range:	-40° to +185° F (-40° to +85°C) FM -55° to +185°F (-48.3° to + 85°C) with Heater Option
Vibration:	In compliance with FM 3260-2003, Meets or Exceeds MIL-STD 810C
Enclosure Type:	NEMA 4, IP66/IP67

APPROVALS & CLASSIFICATIONS

3260

Meets or exceeds MIL-STD 810C. In
compliance with FM3260-2003

ORDERING INFORMATION

D381	3IR+UV Multi -Spectrum Flame Detector in an aluminum enclosure.
D383	3IR+UV Multi -Spectrum Ultra-Fast Flame Detector in an aluminum enclosure.

DA-002	Mounting and Alignment Bracket
DA-003	Air Purge Kit
DA-007	Weather Shield
DA-008	Remote Test Switch
DA-009	Tablet and Diagnostic Software

HW-AM25-0002	M25 x ¾" Brass Adaptor

Installation Recommendations: Please refer to our User Manual for mounting and wiring instructions.

The installation of Detectors Incorporated® flame detectors should be executed in accordance with the recognized national or international standards and codes of practice.

Specifications and wiring information are provided for information only and are believed to be accurate. Detectors Incorporated assumes no responsibility for their use. Data and design are subject to change without notice. Installation and wiring instructions are shipped with the products and should always be used for actual installation. For more information, contact your Sales Representative.

Document No:DS381 Jan 2021